

(57) Abstract

A process for producing at least two different propylene polymer grades, in which process the isotacticity of the polymer is changed while keeping the melt flow rate of the polymer at a predetermined level during a transition of production from a first polymer grade to a second. The process is carried out in a polymerization arrangement comprising at least one polymerization reactor, where propylene is polymerized, optionally with comonomers, under polymerization conditions in the presence of hydrogen as a molecular weight controlling agent and a Ziegler-Natta catalyst system. The catalyst system comprises a catalyst component and an external donor. During a transition of production from the first polymer grade to the second, the external donor is changed, but the hydrogen feed is kept at a predetermined level.